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SIMULATION APPARATUS AND METHOD FOR STORING OPERATION INFORMATION

CROSS-REFERENCE TO RELATED APPLICATION

[0001] The present disclosure relates to the subject matter contained in Japanese Application No. 2002-310479 filed on October 25, 2002, which is incorporated herein by reference in its entirety.

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0002] The present invention relates to a simulation apparatus and a method for storing operation information. In particular, it relates to a simulation apparatus and a method for storing operation information, in which information about operation for setting data to be transmitted to a control target during execution of a simulation can be stored.

2. Description of the Related Art

[0003] In the related art, in order to efficiently design and evaluate an electronic control apparatus or the like for controlling a vehicle engine, various measurements of operating conditions are not carried out with the electronic control apparatus being connected to a real controlled apparatus such as a vehicle. Instead, behavior of the controlled apparatus is simulated by use of a simulation apparatus (that is, arithmetic operation is carried out using a vehicle model expressed by numerical formulas).

[0004] Some simulation apparatuses are equipped with a function for storing information about an operation for setting data to be output to a control target during execution of simulation. JP-B-Hei.8-27589 discloses that the process of an operation carried out actually by an operator using a computer of an operator training simulator, and the process of changing of process values of pressure, flow rate, and so on, in accordance with the operation, are recorded in time series into a save disk as operator's operation information.

[0005] However, in the operator training simulator disclosed in JP-B-Hei.8-27589, the operator's operation information is recorded in time series from a recording start time. Therefore, for example, on the assumption that the recording period is 1 msec, the amount of data to be acquired in one measuring period is 256 bytes, and the recording time is 5 minutes, a disk capacity of about 7.3 Mbytes for the 5 minutes is required. In such a manner, when the operation information is recorded in time series, the recorded data amount increases dependently on the recording period or the recording time. Thus, there is a problem that

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BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a simulation apparatus and a method for storing operation information, and particularly relates to a simulation apparatus and a method for storing operation information in which information about operation for setting data to be transmitted to a control target during execution of simulation can be stored.

2. Description of the Related Art

In the related art, in order to efficiently design and evaluate an electronic control apparatus or the like for controlling a vehicle engine, various measurements of operating conditions are not carried out with the electronic control apparatus being connected to a real controlled apparatus such as a vehicle, but behavior of the controlled apparatus is simulated by use of a simulation apparatus (that is, arithmetic